

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 August 2005 (11.08.2005)

PCT

(10) International Publication Number
WO 2005/072306 A2

- (51) International Patent Classification: Not classified
- (21) International Application Number:
PCT/US2005/002177
- (22) International Filing Date: 19 January 2005 (19.01.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/537,600 19 January 2004 (19.01.2004) US
60/605,219 27 August 2004 (27.08.2004) US
- (71) Applicant (for all designated States except US):
MARTEK BIOSCIENCES CORPORATION [US/US];
6480 Dobbin Road, Columbia, MD 21045 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MORSEMAN,
John, P. [US/US]; 2124 Ramona Lane, Woodstock, MA
21163 (US). MOSS, Mark, W. [US/US]; 211 Potomac
Street, Boonsboro, MD 21713 (US). ELLIS, Lorie, A.
[US/US]; 3 Glenwood Place, BelAir, MD 21014 (US).
- (74) Agents: SEBOR, Angela, Dallas et al.; Sheridan Ross
P.C., 1560 Broadway, Suite 1200, Denver, CO 80202-5141
(US).
- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.
- (84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished
upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: REELIN DEFICIENCY OR DYSFUNCTION AND METHODS RELATED THERETO

(57) Abstract: A method of measuring Reelin as a biomarker, to non-destructively assess or predict DHA levels in the brain and in other, currently inaccessible or difficult-to-access, key components of the central nervous system (CNS) is described. Also described is a method to prevent, delay the onset of, or treat Reelin deficiency or dysfunction and/or a disease or condition associated with Reelin deficiency or dysfunction, comprising administering to a patient diagnosed with or suspected of having a Reelin deficiency or dysfunction an amount of a PUFA, and particularly an omega-3 PUFA, and more particularly, docosahexaenoic acid (DHA) or a precursor or source thereof, to compensate for the effects of Reelin deficiency or dysfunction in the patient. Also described is a method to prevent or reduce development defects or disorders associated with Reelin dysfunction or deficiency through the supple-
mental use of polyunsaturated fatty acids (PUFAs- unsaturated fatty acids having two or more double bonds), and particularly highly unsaturated fatty acids (HUFAs- unsaturated fatty acids having three or more double bonds), and more particularly a HUFA selected from arachidonic acid (ARA), eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and docosapentaenoic acid (DPA), and even more particularly omega-3 HUFAs, and more particularly DHA, to: compensate for reduced fatty acid binding protein or func-
tion thereof in the patient; compensate for reduced brain lipid binding protein or function thereof in the patient; improve the activity of fatty acid binding proteins in the patient; increase the expression of brain lipid binding proteins (BLBPs) in the patient; improve at least one parameter of the mechanism of action of brain lipid binding proteins in the patient; overcome a deficiency of DHA in central nervous system (CNS) structures and improve the resulting function thereof; increase the incorporation of functional DHA and other PUFAs into the phospholipid membranes of glial cells and neurons in the patient; increase the level of Reelin and/or improve the activity of Reelin in the patient; and/or improve at least one symptom of a disease or condition associated with Reelin deficiency or dysfunction.

WO 2005/072306 A2